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EXAMINER	
LUCAS, ZACHARIAH	
ART UNIT	**PAPER NUMBER**
1648	

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/724,388	HONG ET AL.	
	Examiner	Art Unit	
	Zachariah Lucas	1648	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-10,12-18 and 20-22* is/are pending in the application.

4a) Of the above claim(s) *9 and 13-16* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7,8,10,12,17,18 and 20-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *6-28-05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of the Claims

1. Currently, claims 7-10, 12-18, and 20-22 are pending in the application.

2. In the prior action, mailed on December 28, 2004, claims 7-10, 12-18, and 20-22 were pending, with claims 7, 8, 10, 12, 17, 18, and 20-22 rejected; and claims 9 and 13-16 withdrawn as to non-elected inventions. In the Response filed on October 4, 2005, the Applicant presented additional argument in traversal of the rejections.

3. Claims 7, 8, 10, 12, 17, 18, and 20-22 are under consideration.

Information Disclosure Statement

4. The information disclosure statement (IDS) submitted on June 28, 2005 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement has been considered by the examiner.

5. The following reference, cited in the June 2005 IDS, has been crossed out in the reference listing. This is because the reference was previously considered and made of record in the application:

Buchholz et al., J Virol 73: 241-59- cited in the IDS of June 2003.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. **(Prior Rejection- Maintained)** Claims 12 and 20 were previously rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement on the basis that the Applicant was not enabled for the making and use of anti-RSV vaccines (or anti paramyxoviral vaccines in general). In Response, the Applicant has submitted arguments, and information in support thereof, indicating that those in the art have successfully developed certain recombinant attenuated RSV viruses as vaccines. These arguments are persuasive in part. However, while the art indicates that RSV vaccines in general may be enabled, there is not sufficient evidence to demonstrate that the Applicant is enabled for the use of any of the claimed viruses as anti-RSV vaccines. As the Applicant notes on page 6 of the Response, there must be a reasonable correlation between the scope of enablement provided in the specification and that which is claimed.

The claims in the present application are drawn to any paramyxoviral, particularly RSV, vaccines wherein virus comprises a genetic modification. The claims indicate that the modification may be any insertion or deletion to the paramyxoviral genome, or any insertion, deletion, or substitution of a complete open reading frame of the genome. As the Applicant has described, the references in the art indicate that specific modifications to the viral genome do result in viruses sufficiently attenuated, but also sufficiently immunogenic, to provide for a protective response in animal models. However, the teachings of these references are also limited to specific modifications. Moreover, the modifications of Karron relate to genetic modifications not within the scope of the current claims (the temperature sensitive variants of that reference are

the result of substitutions, not insertions or deletions, in the genomic sequence). The teachings of the art also indicate that not every modification results in a virus with such a balance between attenuation and immunogenicity. See e.g., the teachings of Tang and Prince (referred to on page 4 of the June 2004 action- which teach that despite a large number of candidate vaccines none had been identified as safe and effective). As has previously been described, the art indicates that there is significant complexity and unpredictability in the making of such attenuated viruses.

While the art indicates that recombinant techniques, such as those described in the present application, permit the construction and evaluation of a broad range of mutations (see e.g., Crowe et al., Vaccine 20(supp 1): S32-37), this does not overcome the inherent unpredictability in determining what modifications would result in viruses comprising sufficient attenuation. Moreover, the Applicant's own teachings indicate that many modifications either have no effect on or increase the operability of viral genes (thus resulting in a virus with no attenuation, or that is more virulent, compared to the wild-type infectious virus), or result in non-viable viruses- neither of which outcomes results in a virus useful as a vaccine. See e.g., App., pages 58-59, and 62-63. Thus, even if the art indicates that the Applicant may be enabled for the use of specific attenuated viruses comprising specific attenuating mutations as anti-RSV vaccines, it does not demonstrate that mere ability to produce viral attenuations automatically enables those in the art to produce any anti-RSV, or any anti-paramyxoviral, vaccine without undue experimentation. The methods described merely permit those in the art to run the numerous trials required to identify such viruses.

In addition, the present application provides little guidance as to full scope of modifications that may be made. While the application does disclose certain modifications to the

L protein, and describes rescued virus comprising deletions of certain genes, there is no demonstration that the disclosed viruses result in sufficiently attenuated viruses for use as vaccines. Further, the modifications disclosed with respect to the L protein fall outside the scope of the present claims as they identify substitutions, and not insertions or deletions. It is also noted that the claims read on insertions or deletions of nucleotides, or the insertion, deletion, or substitution of any open reading frame, in any gene from any paramyxovirus genome. While the application suggests regions in the genomes where attenuating mutations may be attempted, there is no identification of specific positions or modifications that would result in an attenuated phenotype. Thus, the claims are drawn to a broad genus of attenuated viruses, the scope of which those in the art would be required to identify for themselves.

In view of the breadth of the claims, the unpredictability in the art, and amount of experimentation that would be required to practice the full scope of the claims, and the comparatively limited guidance presented, the application is not found enabling for any vaccine according to the rejected claims for the reasons above, and for the reasons of record. Thus, while the Applicant's arguments are found persuasive in part, they are not deemed sufficient to demonstrate that the application has provided sufficient enabling support to reasonable correlate to the scope of what is claimed.

8. **(Prior Rejection- Maintained)** Claims 7, 8, 10-12, 17, 18, 20, and 21 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to

make and/or use the invention. The claims read on genetically manipulated replication competent infectious RSV comprising any insertion or deletion, or any insertion, substitution, or deletion of an entire open reading frame (ORF).

The Applicant traverses this rejection on the basis of their assertion that they have provided an enabling disclosure, and that the experimentation required to identify the claims viruses in the present application is not undue. In particular, the Applicant asserts that there is no requirement for a "reasonable certainty before performing" an experiment that it will succeed so long as there is a reasonable amount of guidance with respect to the direction of the experimentation.

As previously indicated, the Wands case put forth a series of factors to be considered in making a determination as to whether an application is enabling for a claimed invention. The factors that may be considered include (1) the quantity of experimentation necessary, (2) the amount of direction or guidance presented, (3) the presence or absence of working examples, (4) the nature of the invention, (5) the state of the prior art, (6) the relative skill of those in the art, (7) the predictability or unpredictability of the art, and (8) the breadth of the claims. The Applicant asserts that the Wand decision indicates that there is no requirement for a reasonable certainty that the experiment would be successful a priori, so long as a reasonable amount of guidance has been presented. The Applicant then continues on the assert that the application teaches methods for the modification and screening of modified virus, and provides adequate guidance with respect to the direction of experimentation.

The Wands case related to the production of antibodies against a particular antigen that were able to bind to the antigen with high affinity. The court determined that the Applicant was

enabled for methods of using such antibodies as the application disclosed a method for the production of such antibodies, in combination with a number of working examples. It is noted that the court characterized the experiment for identifying the antibodies as the entire process of immunizing an animal, forming hybridomas, and screening the hybridomas for antibodies with the required affinity. 8 U.S.P.Q. 2d, at 1407. The court also noted that "Wands carried out this entire procedure three times, and was successful each time in making at least one antibody that satisfied all of the claim limitations." Id. Based on this characterization, the court determined that the teachings of the application enabled the scope of the claimed invention- methods of using any antibody with the indicated level of affinity for the identified antigen. Thus, the Wands case involved a situation in which a single experiment with no variable factors was repeated, and where an operable embodiment resulted in each instance.

In the present case, the claims are broadly drawn to genetically modified paramyxoviruses comprising any insertion or deletion. The application provides several suggestions as to the types and placement of modifications that may be made to the viral genomes, and provides examples of experiments that resulted in both operational and in non-functional viruses. See e.g., pages 58-59. Unlike the experimentation involved in the Wands case, each experiment in the present instance involves the production of a single specific viral mutant, and the testing of this specific mutant to determine if it is indeed replication competent and infectious. If one looks to RSV alone, with a genome of over 15,000 nucleotide bases, this permits a large number of potential insertions and deletions, each of which represents a different variable and experiment to be performed.

The Applicant asserts that they have provided guidance as to where to make the modifications. In particular, the Response notes several suggestions as to the types of modifications that may be made. For example, the Response indicates that "non-coding regulatory regions can be modified to obtain attenuated viruses," and that "modifications can be introduced into the viral surface antigens to interfere with the binding affinity of the virus to the host cell." Response, page 13. However, while the application provides such general suggestions, the is no guidance as to what specific modifications can be made to each of the various paramyxoviral sequences that would result in the claimed viruses. Such specific guidance is, however, required as was demonstrated on pages 58-59 which illustrates that different modifications to the same region of the viral genome can have very different effects- resulting unpredictably in both viruses within or without the claimed genus. Thus, the present case is drawn to a broad genus in an uncertain art, and for which comparatively few working examples have been provided. Further, those working examples which have been provided provide little information as to the operability of modifications outside of the L gene, or even to the operability of other modifications within this gene. Further, unlike the wands case which involved relatively little experimentation in that the exact same process was repeatedly performed, the practice of the full scope of the invention in the present case requires that those in the art perform repeated experiments with numerous variables (the different potential modifications) with little guidance as to the specific modifications that would result in virus according to the claims.

The Applicant further asserts that the *Angstadt* case supports their conclusion that the application provides enabling support for the claimed genus. In particular, the Applicant asserts that the decision held the claims at issue therein enabled on the grounds that the skilled artisan

would have read the inventor's specification for directions in making the compounds at issue, and would then determine if such compounds had been made. However, this is not the sole basis on which the Court found enablement in that case. The *Angstadt* court repeated referred to the forty successful experiments of the inventor in that case, also noting that only one of the tested compounds was not effective. 190 U.S.P.Q. 214, at 218. Further, the court also noted that the experiments required to test the various substances were not complex or complicated. Thus, unlike the present case which does involve complex manipulation of genes, in which a large number of inoperative embodiments have been shown, and for which there is little predictability with reference to other potential manipulations, and for the reasons indicated in the prior action, the Applicant reliance on *Angstadt* does not appear well founded.

Further, these same facts relating to the present case indicate that, given the scope of the present claims, the application has not provided sufficient guidance to enable those in the art to make or use viruses according to the rejected claims without undue experimentation. For these reasons, and for the reasons of record, the rejection is maintained.

9. **(Prior Rejection- Maintained)** Claims 7, 8, 10-12, 17, 18, and 20 were rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Applicant asserts that where a specification discloses any relevant identifying characteristics, a rejection for lack of written

description is misplaced. The Applicant asserts that sufficient identification has been presented in the present case.

In support of their position, the Application presents three arguments. First, the Applicant asserts that they have provided a function, and means to test for the presence of the functions. Second, the Applicant asserts that they have provided examples of the claimed genus. Finally, the Applicant asserts that they have provided both a functional requirement and a structural limitation on the claimed genus. These arguments are not found persuasive.

The claims are drawn to compositions comprising any genetically manipulated paramyxovirus that is both infectious and replication competent, wherein the virus comprises a genome that comprises either an insertion or a deletion. It is noted that the respiratory syncytial virus, the subject virus of claim 10, comprises a genome of over 15,000 nucleotide bases. App., page 3. The claims broadly read on a genus wherein the virus may comprise an insertion or a deletion anywhere within this genomic sequence.

With respect to the first argument in traversal, the Applicant argues that in the instant case, the specification teaches examples of how to identify operative viruses, and teaches methods of testing for the required functions. See, Response, page 15. However, while the application may disclose methods of identifying which of the many potential mutations to the genome would result in a virus with the required functions (infectivity and replication competence), it is settled that disclosure of a method of identifying a compound does not provide descriptive support of the compound itself. See e.g., *University of Rochester v. Searle & Co.*, 69 USPQ2d 1886, at 1895 (CA FC 2004). Thus, the Applicant's assertion that they provides such

methods is not found a persuasive argument that the application provides descriptive support for viruses that may be so identified.

The second argument in traversal is that the Examiner has improperly relied on the decision of *In re Smythe* to support the position that disclosure of a sufficient number of working examples fails to provide written descriptive support for a claimed invention. The Applicant responds that this decision actually indicated that a disclosure of a limited number of species might provide such support. The Applicant's interpretation of the case is only partially correct. However, as was indicated in the prior action, in *Smythe* the CCPA specifically indicated that such support for a claimed genus may not be found from the disclosure of a number of species "where there is unpredictability in performance of certain species or subcombinations other than those specifically enumerated." *In re Smyth*, 178 U.S.P.Q. 279 at 284-85 (CCPA 1973). As has been previously described, the art and the application in the present case demonstrate that there is such uncertainty in the operability of species other than those specifically disclosed. This is exemplified by the applications disclosure of the varying results of individual modifications to the L gene on pages 58-59, and 62-63. As the application demonstrates that modifications at various positions among the viral genome would result have various effects on the operability of any particular species, and as the application fails to teach what structures and sequences throughout the RSV genome correlate to the viral functions of infectivity and replication competence, the disclosure of the operative species fails to provide adequate support for the whole of the claimed genus of RSV variants, much less the variants of any paramyxovirus.

It is noted that Applicant discloses that the N, P, and L proteins are the minimal requirements for viral replication competence. Page 6. However, the present claims include

modifications to these proteins, without a description in the application identifying those specific portions of these proteins that must be maintained to result in an infectious particle. Thus, for the reasons indicated above, and previously of record, the disclosure of these minimal genes required for operability is not found sufficient to provide descriptive support as the application does not provides support for the full scope of modifications that may be made to these proteins without a loss of their functions, and therefore of operability of the virus as whole.

The Applicant's third argument is they have provided both a function and an associated structure as is required by the *Eli Lilly* case cited in the prior action. Specifically, the Applicant asserts that descriptive support for the claimed genus is found in the description of the claimed viruses as being replication competent and infectious, and as having the structural limitation that it is a virus of a paramyxoviridae family comprising a "certain modification." This argument is not found persuasive.

It is first noted the claims are not directed to viruses with "a certain modification," but is directed to viruses with certain types of modifications. This is an important distinction because the application does disclose certain specific modifications that may be made to the RSV genome that would appear to result in infectious and replication competent viruses. However, the claims are not limited to these specific modifications. What the claims describe are paramyxoviruses with any modification of a certain type to the viral genome- e.g., an insertion or a deletion of one or more bases in the viral genome.

The argument is not found persuasive with respect to the claimed genus of viruses because the indicated structures do not correlate with the required functions. The *Eli Lilly* case does not merely suggest the presence of a structure and a function, but indicates that where the

Applicant wishes to rely on a function, the functional characteristic may be used in combination with a known or disclosed correlation between the function and a structure. *Eli Lilly*, 43 USPQ2d at 1406. In the present case, there has been no demonstration that there is any correlation between the functional limitations and the mere presence of a viral gene with any particular type of genetic modification. Again, this is exemplified by the disclosure relating to the disclosed modifications to the L protein, where modifications of the same type, but at different positions in the RSV L gene had different functional effects. The fact that similar modifications at different positions resulted in genomes with different functional characteristics demonstrates that the structural limitations of having a paramyxoviral genome with a certain type of limitation does not a structurally identify genomes of viruses capable of replication and infection. Rather, the teachings indicate that viruses that have the required functions merely have different genomic modifications from those that are not replication competent, infectious, or both. Nor is there any structural identifier presented by which those in the art could distinguish between hypothetical genomes of viruses that do have these functions from those that do not. The Applicant's third argument in traversal is therefore also not found persuasive.

Similarly, with respect to claims 18 and 20-22, while the application teaches that the N, P, and L genes are required for viral replication, the application does not disclose the minimal genes required for an infectious and replication competent virus. For example, the application indicates on page 3 that the F and G proteins are involved in viral attachment and cell entry. However there is no disclosure as to whether such proteins would therefore be required components, either in their native form or as a substitute from another strain of the same virus (e.g. substitution of a F or G from type A for that in a type B genome) are required for the

functional limitations. While the application discloses the deletion of the SH and M2-1 genes, such does not indicate what other genes may be deleted without a loss of the required functions.

For these reasons, and for the reasons of record, the rejection is maintained.

Claim Rejections - 35 USC § 102

10. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

11. **(New Rejection- Reference cited in IDS)** Claim 7 is rejected under 35 U.S.C. 102(b) as being anticipated by Calain et al. (J Virol 67: 4822-30- cited in the IDS of June 2005). This claim is directed to a genetically manipulated, replication competent, and infectious paramyxoviridae virus wherein the virus comprises a insertion into the genomic sequence. Calain teaches a recombinant Sendai virus (a paramxyovirus) comprising an insertion of six bases. See e.g., page 4825, Table 2 (the derivative identified as the -17 derivative). The reference teaches that the RNA of this derivative sequence is capable of replication (page 4825, right column), and that the polynucleotides resulted in competent virus particles when the plasmids where replicated by a helper virus. Pages 4826-27 (disclosing that viruses expressed from the plasmid in the presence of a helper virus resulted in "competent" virus, i.e. virus that were infective and replication competent). Thus, the reference teaches a genetically manipulated rabies virus comprising an

insertion and which is both infectious and replication competent. The reference therefore anticipates the indicated claim.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

13. **(Prior Rejection- Maintained)** Claims 18, and 20-22 were rejected under 35 U.S.C. 102(e) as being anticipated by Murphy et al., U.S. Patent 5,993,824 (of record in the action mailed on September 24, 2003). The rejection is withdrawn from claims 18 and 20. However, the rejection is maintained over claim 21, and claim 22 to the extent that it depends from claim 21. The Applicant traverses the rejection by asserting that the present application is entitled to priority to the '439 application, which predates the Murphy reference.

The Applicant asserts that support for the presently claimed inventions may be found in columns 43, 16, and 47 of U.S. Patent 5,840,520, which issued from the '439 application. However, while the patent teaches the deletion of all of the genes and inserting a CAT gene in their place, this does not result in an infectious and replication competent virus as is claimed. Additionally, while the parent application refers to the deletion of genes in influenza, and suggests that these teachings may be applied to RSV, there are no teachings specifically directing those in the art to deletion of the M2-2 ORF of RSV. Finally, it is not clear how the teachings

relating to substitution of one F or G gene for another provide support for the deletion of the M2-2 RSV gene. Nor does there appear to be any other support in the parent application for the species of the claimed RSV comprising a deletion of the M2-2 ORF. It is noted that disclosure of a genus does not provide descriptive support for an undisclosed species. Thus, while the patent/prior application indicates that deletions may be made, there are no teachings relating to the deletion of the M2-2 ORF to make a recombinant, infectious, and replication competent virus.

Conclusion

14. No claims are allowed.

15. Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on June 28, 2005 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609.04(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zachariah Lucas whose telephone number is 571-272-0905. The examiner can normally be reached on Monday-Friday, 8 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Housel can be reached on 571-272-0902. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Z. Lucas
Patent Examiner

JAMES HOUSEL 12/26/05
SUPERVISORY PATENT EXAMINER
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